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The IGAS project: a bridge between IAGOS and the Copernicus Atmosphere Service

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The project IGAS (IAGOS for the GMES Atmospheric Service) aims to better link data streams of atmospheric measurements from commercial airliners provided by IAGOS (In-service Aircraft for a Global Observing System; www.iagos.org) to scientific users and to the Copernicus Atmosphere Service (formerly known as GMES Atmosphere Service). IAGOS is establishing a distributed infrastructure for long-term observations of atmospheric composition on a global scale from an initial fleet of 10-20 long-range in-service aircraft of internationally operating airlines. IAGOS will provide accurate in-situ observations of greenhouse gases (GHGs), reactive gases, aerosols, and cloud particles at high spatial resolution in the free atmosphere, thereby covering the essential climate variables (ECVs) for atmospheric composition as designated by the GCOS programme (Implementation Plan for the Global Observing System for Climate in Support of the UNFCCC, 2010).

The IGAS project, a Collaborative Project under the European Commission's Seventh Framework Programme, aims to provide data streams in both near-real-time and delayed mode to the Copernicus Atmosphere Service, currently represented by MACC-II in its pre-operational state. A major objective is to increase the accessibility of the data through the development and implementation of database tools, and by ensuring that the central IAGOS database is fully interoperable with the Copernicus data archive and the DLR flight campaign archive. The application of IAGOS aerosol and GHG measurements in the Copernicus Atmosphere Service and for satellite validation will be developed and assessed. Furthermore, a major effort is undertaken to evaluate and harmonize the quality of the measurements, ensuring full documentation and traceability to WMO reference standards and conformance with WMO measurement guidelines, through consultation with external experts. Finally, IGAS seeks to enhance IAGOS measurement capabilities through targeted instrument development for the measurement of aerosol extinction, VOCs, speciated cloud water/ice/volcanic ash particles, and water vapour. The presentation will introduce the project and will present recent results obtained within the project so far.